

REMARKS

In accordance with the foregoing, claim 6 has been canceled without prejudice or disclaimer, claims 14-19 and 21 have been amended, and new claim 22 has been added. Claims 1-5, 7-19, 21, and 22 are pending, with claims 1, 8, and 14 being independent. Claims 14-19 and 21 are under consideration as being directed to elected Invention III, and new claim 22 is directed to elected Invention III. Claims 1-5 and 7 are withdrawn from consideration as being directed to non-elected Invention I, and claims 8-14 are withdrawn from consideration as being directed to non-elected Invention II. Canceled claim 6 was withdrawn from consideration as being directed to non-elected invention I. No new matter is presented in this Amendment.

Claim Rejections Under 35 USC 112

Claim 21 was rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement because the Examiner is of the opinion that claim 21 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. This rejection is respectfully traversed.

Claim 21 as it was considered by the Examiner in the Office Action of November 20, 2006, recited the feature "wherein the mask is tensed with a tension that varies depending on a position in the mask." In explaining the rejection, the Examiner states as follows:

There is no support for the limitation of "wherein the mask is tensed with a tension that varies depending on a position in the mask". The specification does provide support for applying different tensions to different sides of the mask to reduce a deviation of total pitch of apertures and a line deviation [0051].

As recognized by the Examiner, paragraph [0051] of the specification of the application as originally filed states that "application of different tensions to different sides of the mask can reduce the deviation of the total pitch and the line deviation." It is submitted that this statement in paragraph [0051] and FIG. 6B which is described in paragraph [0051] provide support for the feature "wherein the mask is tensed with a tension that varies depending on a position in the mask" previously recited in claim 21. As shown in FIG. 6B, the tension in the mask varies in both the X and Y directions depending on a position in the mask. For example, a point in the mask at

the intersection of the lines +Px2/-Px2 and +Py1/-Py1 will be subjected to a tension of Px2 in the X direction and Py1 in the Y direction, while a point in the mask at the intersection of the lines +Px3/-Px3 and +Py5/-Py5 will be subjected to a tension of Px3 in the X direction and Py5 in the Y direction.

Although the propriety of the Examiner's position is not conceded, solely in an effort to eliminate this issue and advance the prosecution of the application, claim 21 has been amended to recite that "the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask." It is submitted that this feature of claim 21 is supported by at least paragraph [0051] and FIG. 6B of the application as originally filed.

For at least the foregoing reasons, it is respectfully requested that the rejection of claim 21 under 35 USC 112, first paragraph, as failing to comply with the written description requirement be withdrawn.

Claim Rejections Under 35 USC 103

Rejection 1

Claims 14-17 and 21 were rejected under 35 USC 103(a) as being unpatentable over Utsugi et al. (Utsugi) (U.S. Patent Application Publication No. 2002/0150674) in view of Ito et al. (Ito) (U.S. Patent No. 5,652,067) and Martin (U.S. Patent No. 4,676,193). This is respectfully traversed.

Claim 14

It is submitted that Utsugi, Ito, and Martin do not disclose or suggest "a flat mask comprising a flat thin plate in which a predetermined pattern of apertures is formed, the flat mask having a first flat surface extending over an entire area of the flat mask, and a second flat surface extending over the entire area of the flat mask, the second flat surface being separated from the first flat surface by a thickness of the mask; a flat frame supporting the first flat surface of the flat mask so that the flat mask is tensed and the first flat surface remains flat; and a flat cover mask supporting the second flat surface of the flat mask so that the second flat surface remains flat" as now recited in independent claim 14.

The Examiner considers FIG. 7 of Martin to disclose the features "wherein all surfaces of the frame facing the one surface of the mask lie in a same first plane" and "wherein all surfaces of the cover mask facing the opposite surface of the mask lie in a same second plane" that were previously recited in claim 14. Although the propriety of the Examiner's position is not conceded, claim 14 has been amended as discussed above solely to eliminate this issue and advance the prosecution of the application.

It is submitted that the metal foil 40' in FIG. 7 of the Martin which the Examiner considers to be "a mask" as previously recited in claim 14 is not "a flat mask comprising a flat thin plate in which a predetermined pattern of apertures is formed, the flat mask having a first flat surface extending over an entire area of the flat mask, and a second flat surface extending over the entire area of the flat mask, the second flat surface being separated from the first flat surface by a thickness of the mask" as now recited in claim 14.

It is submitted that the dimensionally stabilized mask supporting frame 34 in FIG. 7 of Martin which the Examiner considers to be "a frame" as previously recited in claim 14 is not "a flat frame supporting the first flat surface of the flat mask so that the flat mask is tensed and the first flat surface remains flat" as now recited in claim 14.

It is submitted that the clamping member 88 in FIG. 7 of Martin which the Examiner considers to be "a cover mask" as previously recited in claim 14 is not a flat cover mask supporting the second flat surface of the flat mask so that the second flat surface remains flat" as now recited in claim 14.

Furthermore, it is submitted that the features of claim 14 discussed above are not disclosed or suggested by any other portion of Martin, or by Utsugi and Ito.

Claim 17

It is submitted that Utsugi, Ito, and Martin do not disclose or suggest the feature "wherein the flat mask, the flat frame, and the flat cover mask are held together by welds" now recited in dependent claim 17.

The Examiner considers the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 in FIG. 7 of Martin to correspond to "the mask, the frame, and the cover mask" previously recited in claim 17. As recognized by the Examiner,

Martin does not disclose that the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 in FIG. 7 of Martin "are joined together by welding" as previously recited in claim 17, or that they "are held together with welds" as now recited in claim 17. Rather, the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 in FIG. 7 of Martin are held together by clamping as described in column 10, lines 62-66.

However, the Examiner states that "Martin does teach in a different embodiment that parts of the mask can be joined together by welding (column 10, lines 22-32)," and takes the position that it would have been obvious to weld together the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 in FIG. 7 of Martin based on this teaching, stating as follows:

The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair and Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have welded together the mask, frame, and cover mask in the embodiment of FIG. 7 with a reasonable expectation of success because Martin teaches that it is suitable in the art to join parts of the mask together by welding.

However, it is submitted that Martin specifically teaches away from welding together the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 in FIG. 7 of Martin as proposed by the Examiner in the following passage in column 21, lines 18-30, of Martin (emphasis added):

The above method [i.e., the embodiment shown in FIGS. 1-6 of Martin] can utilize the step of rigidly affixing the periphery of the metal foil mask 40' to the circumferentially extending surface by the step of welding the periphery of the metal foil mask 40' to the dimensionally stabilized mask supporting frame 34. In the alternative, a method can utilize the step of rigidly affixing the periphery of the metal foil mask 40' to the circumferentially extending surface by including the step of clamping the periphery of the metal foil mask 40' by a clamping member 88 against the dimensionally stabilized mask supporting frame 34, both illustrated in FIG. 7, to maintain a radial tension in the metal foil mask 40'.

Since Martin specifically teaches away from the modification proposed of the embodiment in FIG. 7 of Martin proposed by the Examiner, it is submitted that the motivation for

the modification proposed by the Examiner is improper. See MPEP 2145(X)(D) (MPEP pages 2100-160 and 2100-161).

Furthermore, it is submitted that holding the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 in FIG. 7 of Martin together by welding as proposed by the Examiner would change the principle of operation of the embodiment in FIG. 7 of Martin, which is to hold the metal foil 40', the dimensionally stabilized mask supporting frame 34, and the clamping member 88 together by clamping. Accordingly, it is submitted the Examiner's proposed modification is improper. See MPEP 2143.02(VI) (MPEP page 2100-124).

Claim 21

It is submitted that Utsugi, Ito, and Martin do not disclose or suggest the feature "wherein the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask" now recited in dependent claim 21.

The Examiner considers the disclosure of "a securing device for rigidly affixing the periphery of the mask to the circumferentially extending surface with a substantially uniform tension applied to and in the plane of the mask" in the abstract of Martin to disclose the feature "wherein the mask is tensed with a tension that varies depending on a position in the mask" previously recited in claim 21 based on the following rationale:

Martin teaches that the mask has substantially uniform tension (abstract). In other words, the tension of the mask may not be completely uniform. Thus, the tension of the mask may vary depending on a position in the mask.

Although the propriety of the Examiner's position is not conceded, solely in an effort to eliminate this issue and advance the prosecution of the application, claim 21 has been amended to recite that "the flat mask is tensed with different tensions at different points on each of a plurality of sides of the flat mask." It is submitted that this feature of claim 21 is not disclosed or suggested by the abstract of Martin, or by any other portion of Martin, or by Utsugi and Ito.

Conclusion—Rejection 1

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 14-17 and 21 (i.e., claims 14, 17, and 21 discussed above and claims 15 and 16 depending from claim 14) under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin be withdrawn.

Rejection 2

Claim 15 was rejected under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Yamada et al. (Yamada) (U.S. Patent Application Publication No. 2001/0019807). This rejection is respectfully traversed.

Notwithstanding the position taken by the Examiner, it is noted that claim 15 depends from claim 14, and it is submitted that claim 15 is patentable over Utsugi, Ito, Martin, and Yamada for at least the same reasons discussed above that claim 14 is patentable over Utsugi, Ito, and Martin.

For at least the foregoing reasons, it is respectfully requested that that the rejection of claim 15 under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 14, and further in view of Yamada be withdrawn.

Rejection 3

Claims 18 and 19 were rejected under 35 USC 103(a) as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 17, and further in view of Kitazume (U.S. Patent Application Publication No. 2002/0025406). This rejection is respectfully traversed.

It is submitted that Utsugi, Ito, Martin, and Kitazume do not disclose or suggest the feature "wherein the welds are dot welds" now recited in dependent claim 18 or the feature "wherein a welding pitch between the dot welds is 3 mm or less" now recited in claim 19 for at least the same reasons discussed above that Utsugi, Ito, and Martin do not disclose or suggest the related feature "wherein the flat mask, the flat frame, and the flat cover mask are held together by welds" now recited in dependent claim 17 from which claims 18 and 19 depend.

For at least the foregoing reasons, it is respectfully requested that the rejection of claims 18 and 19 under 35 USC 103(a) as being as being unpatentable over Utsugi in view of Ito and Martin as applied to claim 17, and further in view of Kitazume be withdrawn.

Patentability of New Claim 22

It is submitted that Utsugi, Ito, Martin, Yamada, and Kitazume do not disclose or suggest the feature "wherein the flat frame and the flat cover mask are the only elements that touch the flat mask" recited in new dependent claim 22.

For at least the foregoing reasons, it is submitted that claim 22 is patentable over Utsugi, Ito, Martin, Yamada, and Kitazume, and an indication to that effect is respectfully requested.

Conclusion

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this paper, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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